

TODAYS LESSON

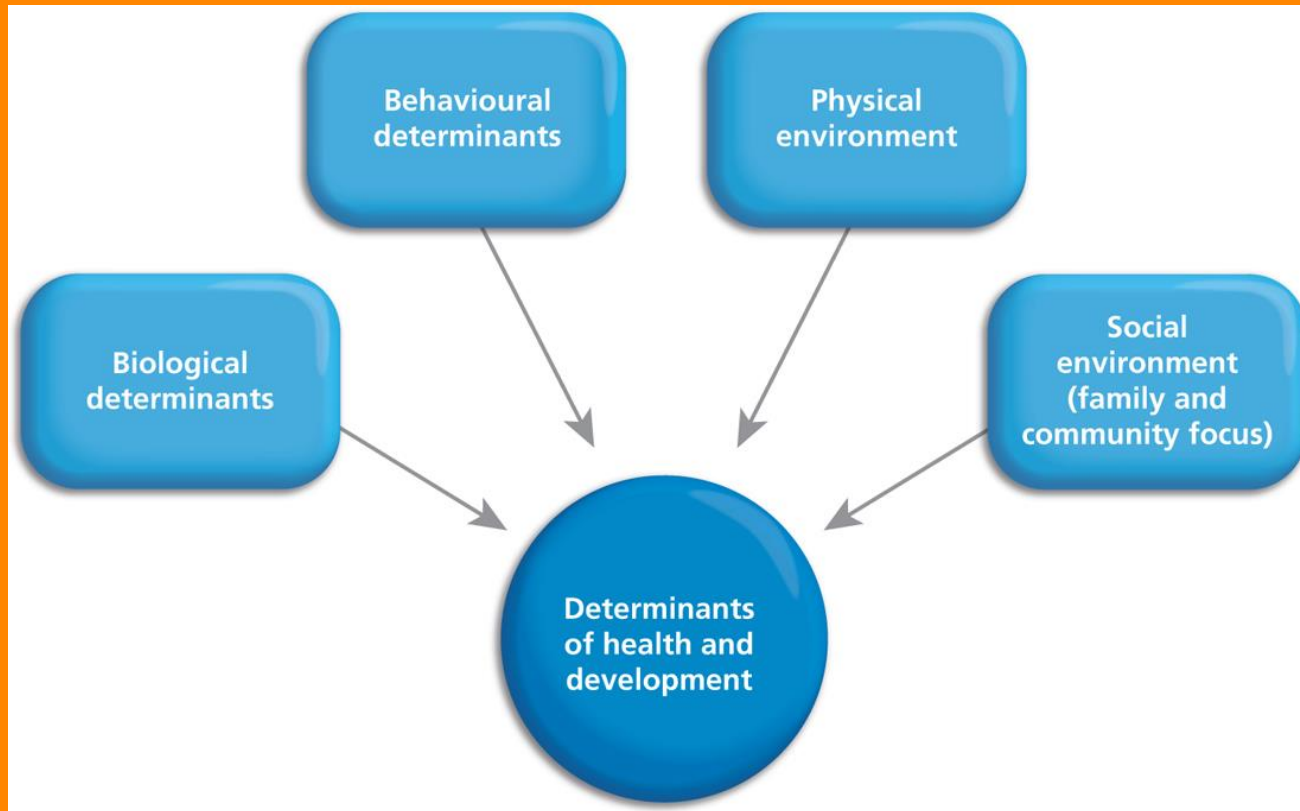
Title: Determinants of the health and development of Australian youth.

-Biological determinants

Success Criteria:

I understand the biological determinants of health & development.

THE DETERMINANTS OF HEALTH & DEVELOPMENT DURING YOUTH



All four categories of the determinants of health combine to produce an individual's health and development

Understanding the determinants of health and development is important for understanding trends in health issues and the potential for prevention and protection against disease.

Determinants influence the number of new cases of illness or injury. They also influence whether health issues may worsen or improve and therefore provide great insight into health and development promotion.

THE IMPACT OF BIOLOGICAL DETERMINANTS

Biological determinants- factors relating to the body that impact on health, such as genetics, hormones, body weight, blood pressure, cholesterol levels, birth weight.

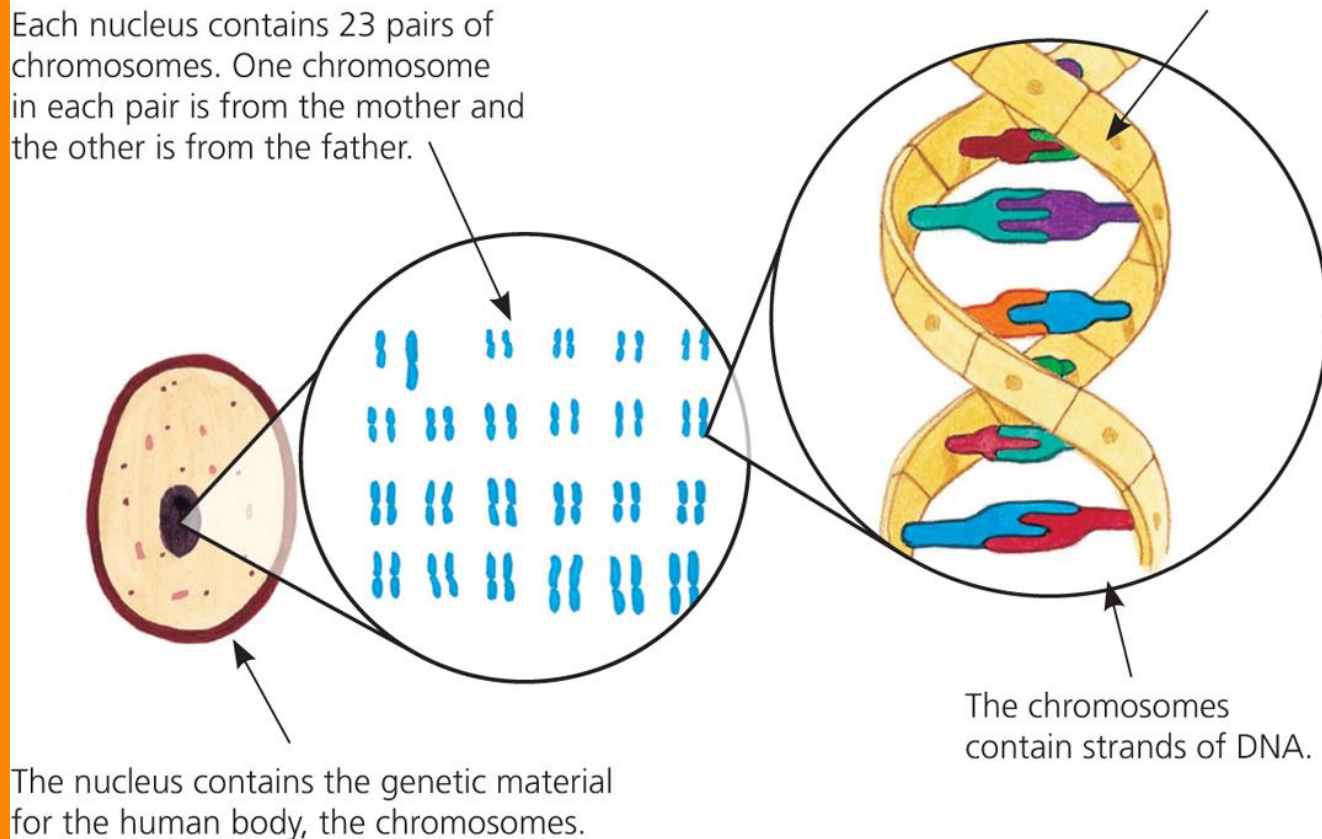
GENETICS

The term 'genetics' refers to the biological information that is passed down from parents to children. Most cells in the human body contain this genetic blueprint, which contributes to many aspects of health and individual human development for youth.

Most cells in the human body contain a nucleus, which is the control centre of the cell (figure 3.5 next slide). The nucleus controls the functions of the cell including the reproduction of cells and the timing of development. Within the nucleus there are structures called chromosomes. The chromosomes contain links of DNA called genes.

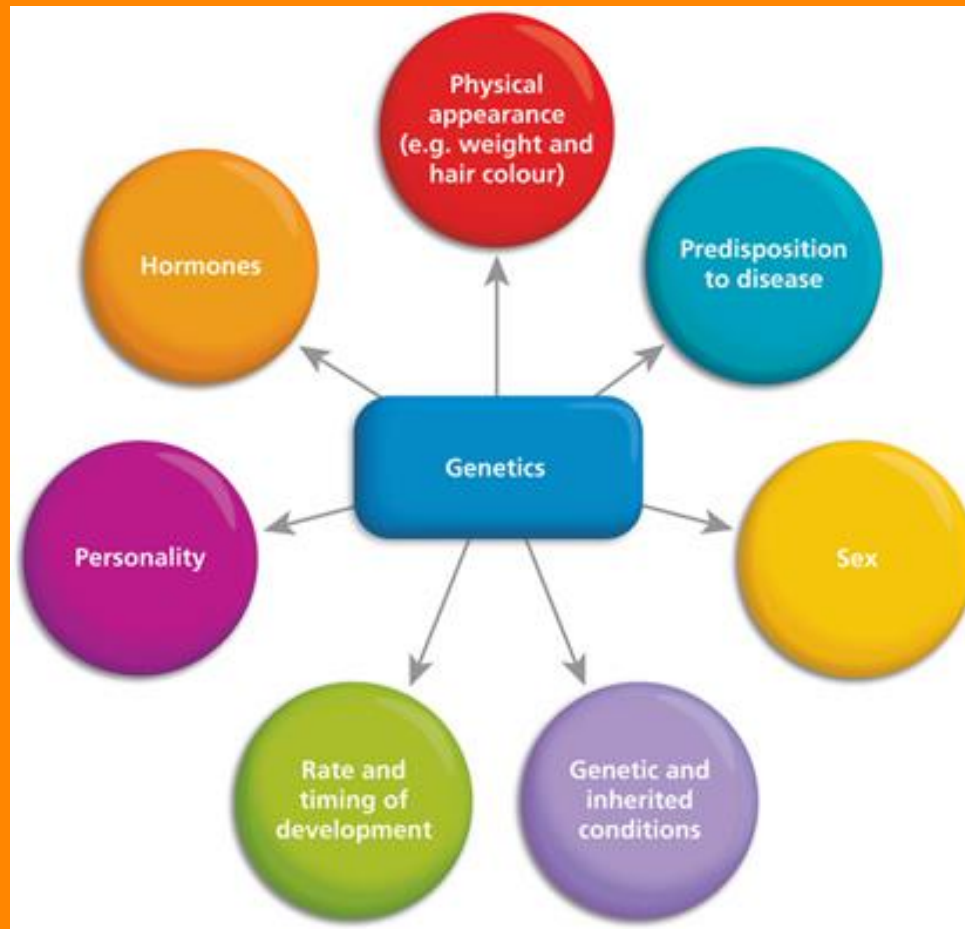
Each nucleus contains 23 pairs of chromosomes. One chromosome in each pair is from the mother and the other is from the father.

Sections of DNA are called genes and control many aspects of health and development.



Genes have a significant impact on health and individual human development (figure 3.6), but there are many other determinants that also play a role. A person's environment can be just as influential. Simply having the **genetic potential** for a trait or condition does not mean that a person will necessarily display that trait or condition.

FIGURE 3.6 SELECTED FACTORS THAT ARE FULLY OR PARTIALLY CONTROLLED BY GENES



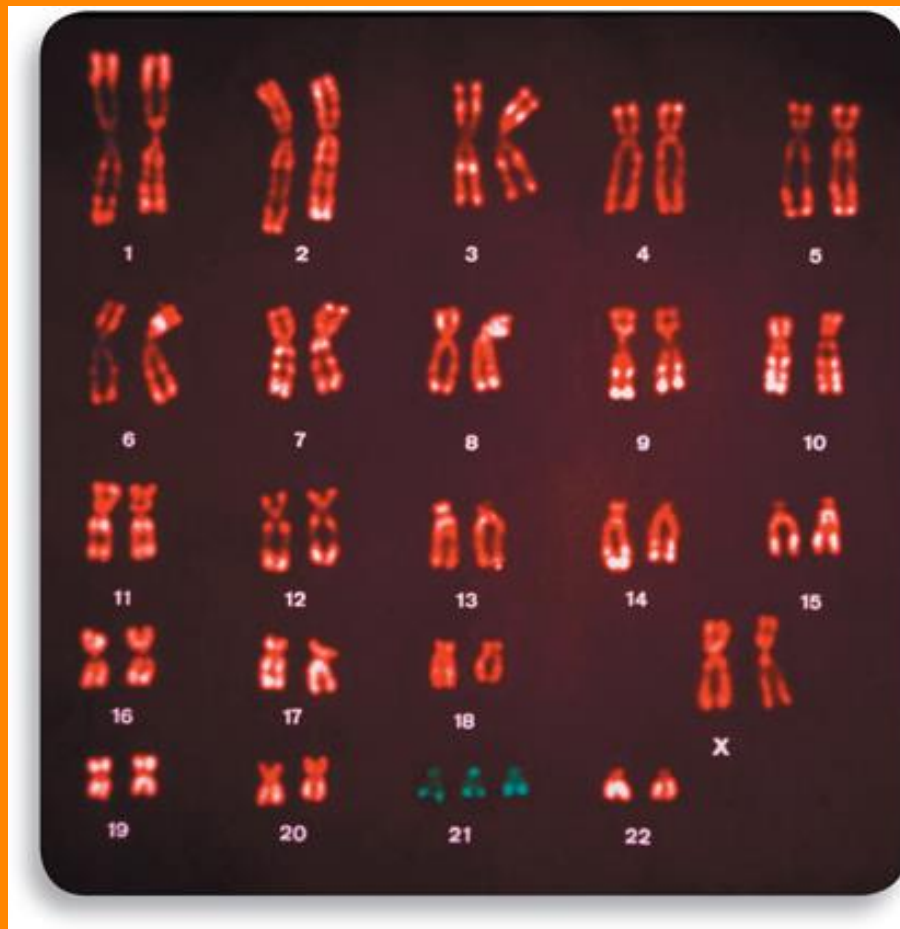
Physical appearance has a large genetic component. A person has genetic potential in many aspects of their physical appearance (e.g. height, weight, skin colour, freckles, hair and eye colour, muscle mass and facial features). Other determinants also play a part, and they can be just as influential as genes. For example, a person who has the genetic potential to be tall might not consume sufficient nutrition and so could end up shorter than the maximum height possible according to their genetic potential. Conversely, a person with genes that increase the likelihood of being overweight might exercise and eat healthy foods and thereby maintain an ideal body weight. A person with black hair could simply dye it blonde.

- **Genetics determine sex, which has a large impact on health and individual human development. Some conditions occur only in males (e.g. prostate cancer) and some conditions are more common in females (e.g. breast cancer).**

- **Genetic conditions** are conditions caused by an abnormality in the genes. Such conditions often occur at conception if there is an abnormality when the sperm and egg fuse together. These conditions are referred to as genetic abnormalities (or anomalies) and examples include **Down's syndrome** (figure 3.7) and **Turner's syndrome**. Sometimes the genes for certain genetic conditions may already be present in the mother or father and can be passed on to the children. These conditions are called **inherited conditions** and examples include **haemophilia** and **muscular dystrophy**.

- All genetic conditions can impact on the health and individual human development of youth. The condition may make the youth more likely to develop early or late, to lack mobility or motor skills, to be unable to participate in certain activities due to the risk of injury or lack of physical ability, or to be more susceptible to illness. As a result, development may not occur as expected during this stage of the lifespan.

FIGURE 3.7 DOWN'S SYNDROME OCCURS AS A RESULT OF HAVING THREE CHROMOSOMES, INSTEAD OF TWO, ON THE 21ST PAIR.



- All individuals have a **genetic predisposition** to certain diseases and conditions. One person may be more likely to develop cancer and another may be more likely to have asthma. However, other determinants (including behavioural and environmental) may also play a key role. Therefore, a person who is predisposed to cancer may not develop it due to their behavioural and environmental determinants

- . Many leading causes of mortality and morbidity for youth have a genetic component including cancer, depression and anxiety, respiratory conditions such as asthma and endocrine conditions such as diabetes.

- **Genetics contribute to personality. Personality in turn contributes to many aspects of health and development including the likelihood of taking risks, sociability and the development of values and beliefs. Again, other determinants also play a significant role so that a youth with the genetics for an outgoing personality may have had negative social experiences that make them more withdrawn.**

- **Genetics also influence hormone release during youth and this leads to many of the changes experienced during the youth stage. The role of hormones is worth examining in more detail.**

HORMONAL CHANGES

- Hormones are a significant biological determinant during youth and contribute to many changes that occur during this stage of life.
- Hormones affect health and development in numerous ways including the timing and rate of development, functioning of the immune system, mood, the regulation of body processes such as metabolism, and anxiety levels.

- **Hormone changes during youth are caused by numerous factors including genetics and body weight. It is the release of hormones that triggers puberty and results in the changes in physical development that occur during this stage. Hormones influence when and how quickly an individual develops, and there is great variation in the rate of development. This is partly why some individuals start puberty at eight and others may not start until 16**

- . The duration of puberty also varies greatly and can last from two to eight years. Generally speaking, the earlier an individual starts puberty, the faster they move through it (although this has no bearing on final height).

- **Rate and timing of development can affect other aspects of health and development including the peer group a youth associates with, motor skill development and self-esteem.**

- **Rate and timing of development can affect other aspects of health and development. Those who start puberty particularly early may feel embarrassed about their changing body and experience reduced self-esteem as a result. They might be expected by others to act more maturely because they look older than their actual age. This can affect their self-esteem and social development.**

- **Some studies also suggest that females who start puberty early may be at increased risk of breast cancer in later life. In males, early onset of puberty may be associated with increased strength and sporting prowess, which may enhance other areas of health and development for these individuals (e.g. motor skill development and social health). Those who develop early may socialise with older people, and some studies suggest that they are more likely to experiment with drugs and alcohol at an early age.**

- **Hormones are responsible for sperm production in males and regulation of the menstrual cycle in females. The regular fluctuations in hormones for females can contribute to other aspects of health such as mood and abdominal pain. Testosterone in males is thought to have an influence on their higher rates of risk-taking and ultimately injury.**

- Growth hormone is largely responsible for changes in height during youth, and the amount released may influence final height (figure 3.8).

- **FIGURE 3.8** Hormones are largely responsible for the physical development, including growth, that occurs during youth.



- Complete Activity 4.1 page 74

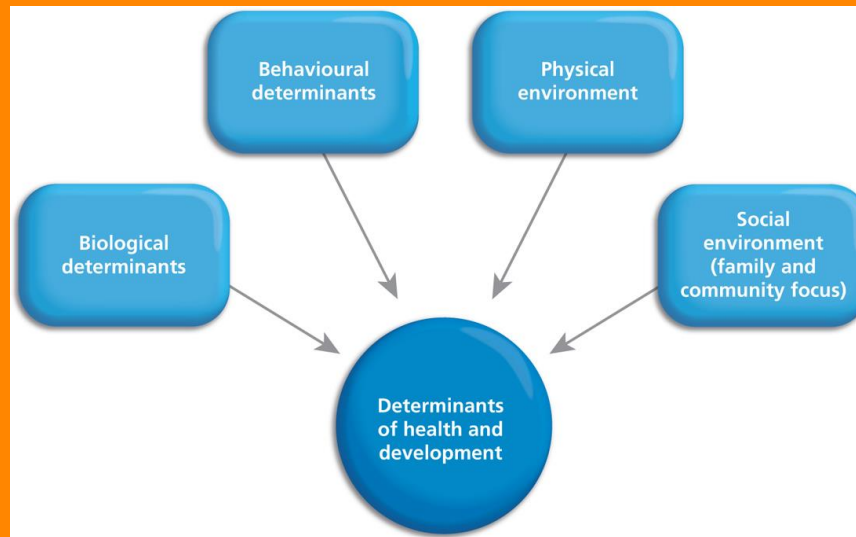
TODAY'S LESSON

Title: Determinants of the health and development of Australian youth.

-Behavioural determinants

Success Criteria:

I understand the behavioral determinants of health & development.



BEHAVIORAL DETERMINANTS

- During childhood, a lot of the health behaviours that people engage in are based on the decisions made for them either by law and policy makers, or by their family. As individuals enter the youth stage, they start to take more responsibility for the choices they make. The choices made during this stage can have short- and long-term consequences for the individual.

DEFINITION

- **Behavioural determinants-** actions or patterns of living or a group that impact on health such as smoking, sexual activity, participation in physical activity and eating practices.

SUN PROTECTION

- Australia's climate is among the harshest in the world and skin cancer is the most commonly diagnosed cancer. **Sunburn is one of the biggest risk factors for skin cancer (figure 3.14). Skin cancers can be categorised into two groups: melanoma and non-melanoma skin cancers.**



- **FIGURE 3.14** Sunburn should be avoided because it is one of the biggest risk factors for skin cancer.



FIGURE 3.15 SURGERY IS COMMONLY REQUIRED TO REMOVE SKIN CANCER, AND IT OFTEN CAUSES SCARRING BECAUSE THE SURROUNDING TISSUE IS USUALLY REMOVED AS WELL.



- The amount of UV radiation that a person is exposed to during childhood and youth is one of the most detrimental risk factors for skin cancer. People with fair skin that burns easily, those with freckles and/or moles and those with a family history of skin cancer are also at an increased risk. Although skin cancer becomes more common in later life, young people are still at great risk.



- In fact, according to the Australian Institute of Health and Welfare in 2008, skin cancer was the most commonly diagnosed cancer among people aged 12–24, accounting for around 30 per cent of all newly diagnosed cancers. A key reason for this is that youths are less likely to engage in sun protection behaviours than adults.

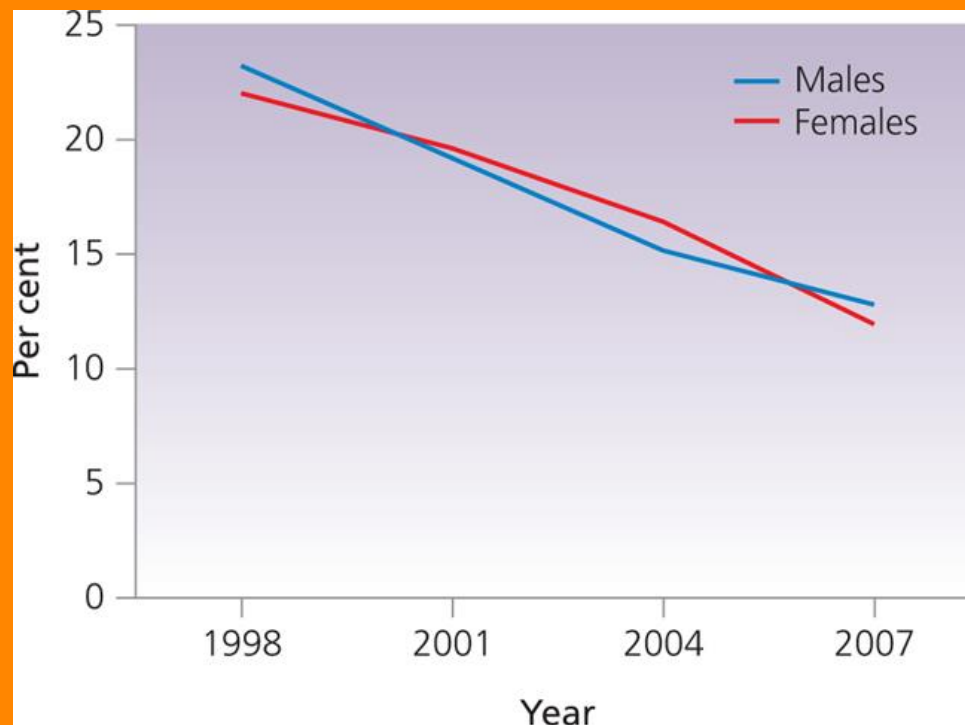
THE NATIONAL SUN SURVEY OF AUSTRALIANS (2003-2004)

- Found that the most commonly reported sun protection behaviours for the 12-17 year olds were wearing headwear (38%), using sunscreen (37%) and wearing three quarter or long long cover (37%)
- However the study also found that 48% of young people failed to combine the recommended three behaviours resulting in 25% of youth aged 12-17 getting sunburnt on a typical weekend.

SUBSTANCE USE

- Youth is often a stage of the lifespan where people experiment with different substances. The reasons for this are related to youths experimenting with aspects of their identity and to brain development that make youths more likely to take risks.

**FIGURE 3.17 DAILY SMOKING RATES AMONG YOUNG PEOPLE
AGED 14–24 YEARS, BY SEX, 1998–2007**



**The percentage of young
Australians who smoke has
decreased significantly over the
past decade**

- People with depressive symptoms are more likely to smoke, although it is not clear if smoking contributes to depression or vice versa.
- There is also evidence that tobacco use has a relationship with the use of other drugs such as alcohol and marijuana.

- The longer a youth smokes, the more likely they are to develop long-term conditions including:
- **cardiovascular disease** — tobacco smoking increases the rate of atherosclerosis in the body and therefore increases the risk of cardiovascular disease
- **many forms of cancer** — tobacco smoke can facilitate the development of cancerous cells in many parts of the body, including the lungs and breasts
- **respiratory conditions** such as emphysema.

- As fitness levels decrease, the young smoker may be less inclined to participate in sporting activities.
- This could affect all areas of development including motor skills and social development.
- It could also make the youth less likely to participate in sporting activities in later life, which could lead to an increased risk of cardiovascular disease and cancers.

ACTIVITY- USING NETBOOKS

- Access the website www.quit.org.au and answer the following in your workbook:
- List 3 reasons to Quit
- Write a paragraph about the health effects of smoking
- Outline two possible ways to quit
- List 3 tips to cope with cravings
- How many smokers will die because of their smoking?
- Describe what happens to the body if a smoker quits

Once finished click on interactive tools-

What's the real cost of smoking and smoking & your body?

ALCOHOL USE

- **Alcohol is the most common social drug used in Australia.**
- **In moderation, alcohol poses minimal risks to health and may even promote cardiovascular health for some people.**
- **Excessive alcohol intake, however, puts individuals at an elevated risk of many causes of morbidity and mortality.**
- **Experimentation with alcohol often starts during youth when the individual may not have the knowledge, experience or supervision to moderate their drinking.**

- Binge drinking is the major concern associated with alcohol consumption by youth. Binge drinking results in many hospitalisations and other short-term effects on youth health each year. In fact, according to the Australian
- Institute of Health and Welfare's *2007 National drug strategy household survey*, youths often experience one or more negative short-term effects associated with binge drinking. Examples of these include:
 - violence
 - accidents such as drowning
 - unsafe sexual practices
 - unconsciousness
 - vomiting.



- Excessive alcohol consumption may begin in youth and continue into adulthood.

The long-term effects associated with alcohol consumption include:

- cardiovascular diseases
- type 2 diabetes
- certain types of cancer
- mental illness.



- Youth might socialise with other young people who drink and, while under the influence of alcohol, could behave in a way they regret. Their mental health may suffer as a result of feelings of regret and guilt.



- The development of youth can also be significantly affected by alcohol consumption. Alcohol can reduce the absorption of nutrients, which can contribute to malnutrition. If the essential nutrients required for physical development are not present, then body systems such as the skeletal and muscular system may not develop optimally.



- **Socialising regularly under the influence of alcohol could prevent the individual from developing social skills while sober, and they might begin to rely on alcohol to make friends or socialise effectively. Their self-concept could be affected by alcohol consumption, especially if they had negative experiences while drinking.**
- **Excessive alcohol consumption can lead to lethargy (tiredness), which can reduce concentration levels and ultimately performance at school, which can affect intellectual development. Alcohol can also affect brain function and therefore intellectual development.**